

CLAIMS:

1. Use of syndiotactic/atactic block polypropylene;

- (i) as a modifier of isotactic and/or copolymeric polypropylene, and/or another polyolefin;
- (ii) as a component in an adhesive composition;
- 5 (iii) as a component in a shock absorber;
- (iv) as a component in a waterproof membrane;
- (v) in the form of a packaging film or as a component thereof;
- (vi) in the form of a drawn fibre, film or thread, or as a component thereof;
- (vii) as a continuous phase component in a shapable composition;
- (viii) as a component in an acoustic absorbent material;
- (ix) in the form of a foam or as a component thereof;
- (x) in a composition for moulding into a footwear component;
- (xi) as a bitumen modifier;
- 10 (xii) as a compatibilizer, an emulgator or an emulsifier;
- (xiii) as a component in a coextrudate;
- (xiv) as a viscosity improver;
- (xv) in a composition or article substantially stable to gamma irradiation;
- 15 (xvi) as a component in plastics recycle material; or
- 20 (xvii) when cross-linked, as a spilled oil absorber.

2. Use according to claim 1, wherein the molecular weight of the syndiotactic/atactic block polypropylene is at least 120 kD.

3. Use according to claim 1 or claim 2, wherein the syndiotactic/atactic block polypropylene comprises alternating blocks of syndiotactic and atactic sequence.

4. Use according to any one of claims 1 to 3, wherein the syndiotactic/atactic block polypropylene comprises a fraction of syndiotactic triads (rr) of at least 70%, as determined by <sup>13</sup>C NMR.

5. A polyolefin modified with syndiotactic/atactic block polypropylene.

6. A polyolefin according to claim 5, which comprises a high impact resistance polypropylene, comprising a dispersion of syndiotactic/atactic block polypropylene in a continuous phase comprising isotactic and/or copolymeric polypropylene.

7. A high impact resistance polypropylene according to claim 6, wherein the amount of syndiotactic/atactic block polypropylene is in the range 3 to 50% by weight of the polypropylene.

8. An adhesive composition comprising a syndiotactic/atactic block polypropylene and at least one component selected from a wax, a tackifying resin and a reinforcing resin.

9. A shock absorber comprising syndiotactic/atactic block polypropylene.

10. A waterproof membrane comprising a sheet of syndiotactic/atactic block polypropylene modified with carbon black, a UV absorber, an antioxidant and/or a weather resistance improver.

11. A packaging material comprising a blown film of polypropylene comprising a syndiotactic/atactic block polypropylene.

12. A packaging material according to claim 11, wherein the polypropylene comprises a blend of the syndiotactic/atactic block polypropylene with isotactic or atactic polypropylene.

13. A packaging material according to claim 11 or claim 12, wherein the blown film is shrinkable.

14. A drawn fibre, film or thread of syndiotactic/atactic block polypropylene.

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24. A bitumen composition comprising a blend of bitumen with a syndiotactic/atactic block polypropylene.

25. A bitumen composition according to claim 24, wherein the amount of syndiotactic/atactic block polypropylene is less than 35% by weight of the composition.

26. A coextrudate of syndiotactic/atactic block polypropylene with polypropylene and another polyolefin.

27. A coextrudate according to claim 26, wherein the syndiotactic/atactic block polypropylene comprises a layer in a laminate between a layer of the polypropylene and a layer of the polyolefin.

28. A coextrudate according to claim 27, wherein the polypropylene comprises syndiotactic polypropylene and the polyolefin comprises isotactic polypropylene.

29. A motor oil which includes syndiotactic/atactic block polypropylene.

30. A thermoplastic elastomer gel comprising cross-linked syndiotactic/atactic block polypropylene.

31. A spilled oil absorber comprising a thermoplastic elastomer gel according to claim 30.

32. A compound, blend or mixture of syndiotactic/atactic block polypropylene with plastics recycle material.

33. A composition or article substantially stable to gamma irradiation, which comprises syndiotactic/atactic block polypropylene.